Direct to Java Client

Session 706

Direct to Java Client

Ernest Kim
WebObjects Engineering

Java Client

- A technology for creating
  - Distributed
  - 3-tier (HTTP)
  - Desktop applications (Swing)
- Platform independent (Java)
- Localizable
- Designed for the intranet (not Internet)

Direct to Java Client

- An infrastructure that helps you create clients quickly

  - Generates user interface dynamically

  - Provides built-in functionality

  - Ideal for prototyping

  - Offers many customization techniques

What You'll Learn

- What do the default applications offer you?

- Why should you use Direct to Java Client?

- How can you customize applications?
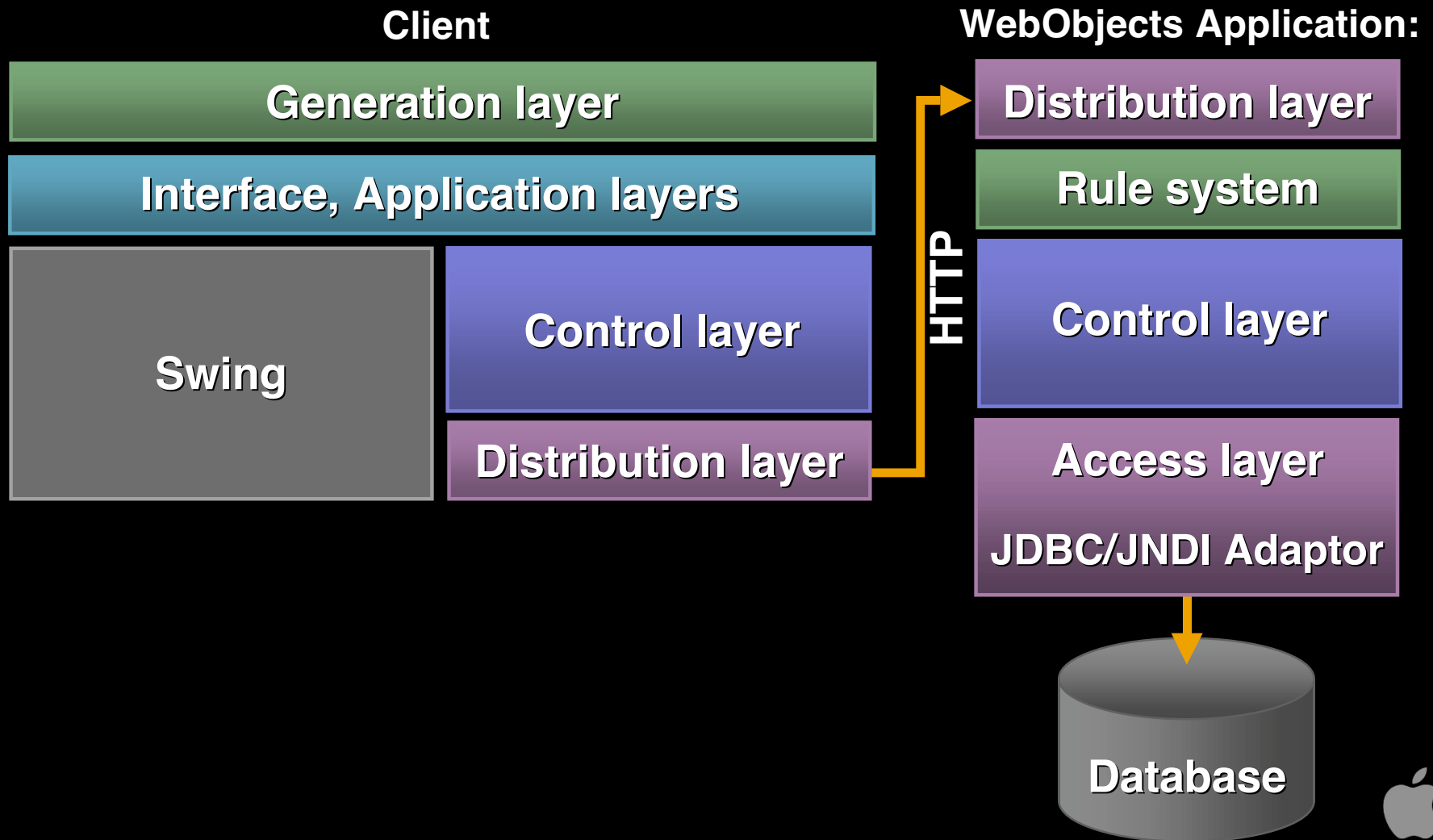
- How can you integrate Web Services?

Demo

Default Application

**Brent Shank
Technical Publications**

3-Tier Architecture

Client

WebObjects Application:

| Generation layer |
| Interface, Application layers |

| Swing | Control layer |
| | Distribution layer |

HTTP

| Distribution layer |
| Rule system |
| Control layer |
| Access layer |
| JDBC/JNDI Adaptor |

Database

Display Objects

- Display Groups
  - Coordinate flow of data between user interface objects and editing contexts
- Associations
  - Synchronize user interface objects with enterprise object values
- Aspects
  - Define various parameters of display objects

Controllers

- Implement client functionality

- Act as the glue between user interface objects and business logic

- Know how to create and layout user interface objects (display groups) based on Enterprise Objects infrastructure (editing contexts)

Design Options

- Two options
    - Direct to Java Client
    - Interface files (NIBs)
- Static vs. Dynamic
    - Productivity
    - Consistency with data model
    - Localization

Demo

Assistant

**Brent Shank
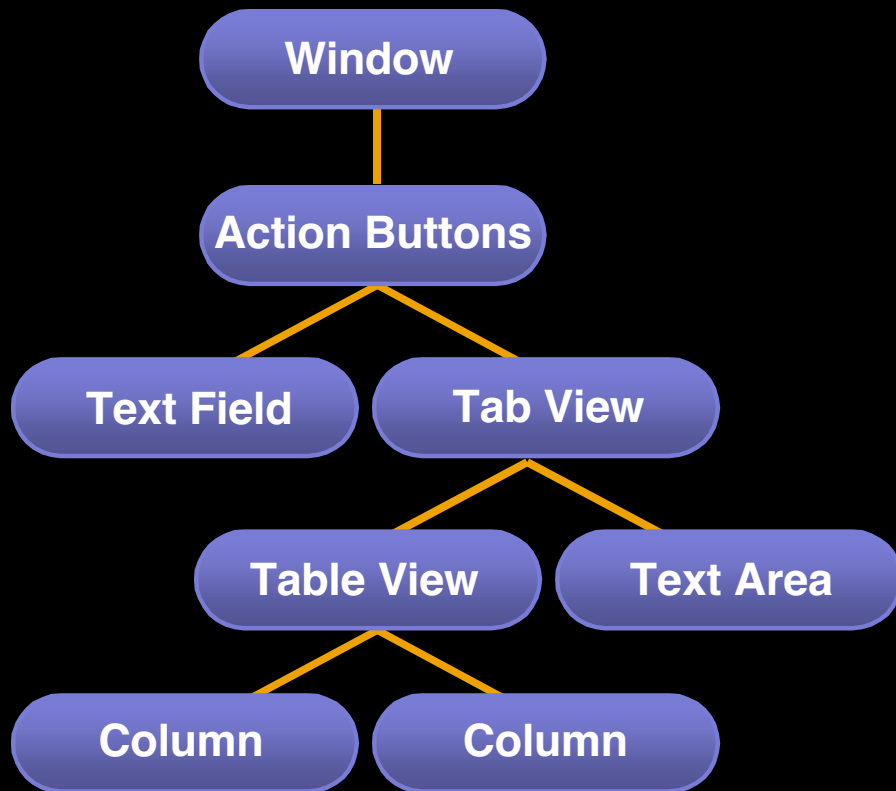Technical Publications**

Controller Types

- All subclasses of EOController
    - Application object
    - User interface controllers
    - Entity level controllers
    - Property level controllers

Controller Hierarchy

- Controllers are organized in hierarchies

Controller Hierarchy in XML

- Controller hierarchies are defined in XML

```
<WINDOWCONTROLLER position="Center" label="Movie">
    <ACTIONBUTTONSCONTROLLER>
        <TEXTFIELDCONTROLLER label="Title"/>
        <TABVIEWCONTROLLER>
            <TABLECONTROLLER label="Roles">
                <COLUMN CONTROLLER label="Role Name"/>
                <COLUMNCONTROLLER label="Talent Name"/>
            </TABLECONTROLLER>
            <TEXTAREACONTROLLER label="Plot Summary"/>
        </TABVIEWCONTROLLER>
    </ACTIONBUTTONSCONTROLLER>
</WINDOWCONTROLLER>
```
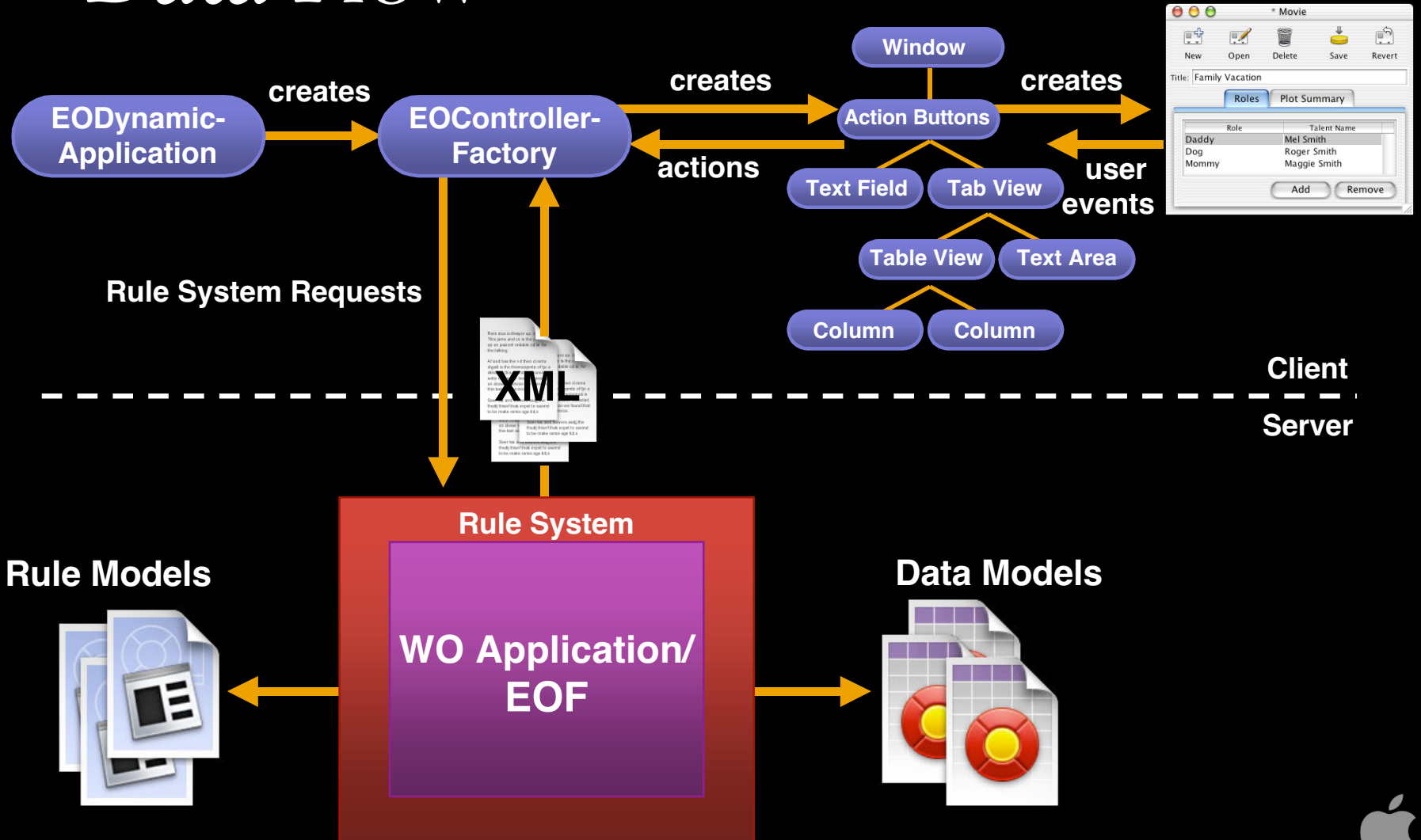
Rule System

- Question/answer mechanism
- Generates description of user interface
- Resides on server for
  - Sharing
  - Security
- Has built-in functionality (≈ 100 default rules)
- Extensible (easy to define custom rules)

Data Flow

EODynamic-Application — creates → **EOController-Factory**

EOController-Factory — creates → **Action Buttons**

Action Buttons — creates → (Movie window)

Window

Action Buttons — actions → **EOController-Factory**

Action Buttons — user events ← (Movie window)

Text Field   **Tab View**

Table View   **Text Area**

Column   **Column**

Rule System Requests

XML

Client

Server

Rule System

WO Application/ EOF

Rule Models

Data Models

Customization Techniques

1 **Assistant**
Rule Editor

2 **Freeze XML**
Freeze Interface Files

3 **Subclass controller classes**
Override controller factory

Customization Techniques

- Freezing XML
  - Bypass rule system
  - Static XML
  - Mix with Dynamic Elements
  - Use your own templates
  - Complete/partial windows
- Need rule to register XML component

Demo

Freezing XML

Brent Shank
Technical Publications

Customization Techniques

- Freezing interface files (NIBs)
  - Bypass XML generation
  - Full control over widget layout
  - Complete/partial windows
- Need rule to register interface file
- Need rule to suppress standard subcontrollers

Demo

Freezing Interface Files

Brent Shank
Technical Publications

Customization Techniques

- Subclassing controller classes
  - Custom widgets/associations
  - Different layout mechanisms
  - Special qualifiers/fetch specifications
  - Additional actions
- Programmatically change factory behavior
  - Customize flow of user interface

Let's Not And Say We Did!

Brent Shank
Technical Publications

Web Services

- Comparison with EODistribution

    - Distributed, Platform independent

    - EODistribution is tuned for Enterprise Objects

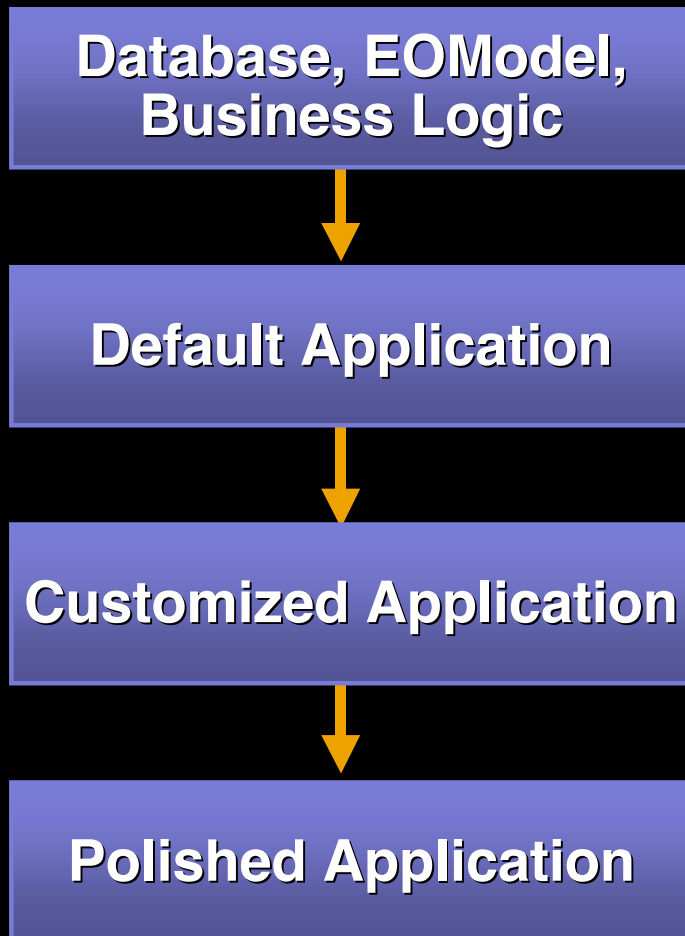- Direct to Web Services/Assistant

GOAL FOR NEW RELEASE

Demo

Web Services

Brent Shank
Technical Publications

Development Process Changes

Database, EOModel, Business Logic

↓

Default Application

↓

Customized Application

↓

Polished Application

- Develop in iterations and focus on business logic

- Create database and EOModel sufficient to run default application

- Customization is quick and easy (efficient prototyping)

- Delay polish (user interface layout, application logic) until business logic is finalized

Benefits

- Fast, efficient development
- Immediate reaction to changes in business requirements/data model
- Reduced testing time
- Focus on core competency (business logic)

Future

- Two-tier applications
- New controllers
    - Split view controller
    - Tree view controller
- Dynamic layout enhancements
- Web Services

GOAL FOR
NEW RELEASE

Summary

- Direct to Java Client makes life easy
  - Dynamic generation of applications simply based on EOModel
  - Controller classes with predefined, tested functionality
  - Designed for extensibility
  - Powerful customization

WebObjects Lab

- Located downstairs in Room L

- Lab hours
  - Monday   12:00pm–6:00pm
  - Tuesday   9:00am–2:00pm
  - Wednesday   9:00am–6:00pm
  - Thursday   9:00am–6:00pm
  - Friday   9:00am–6:00pm

Roadmap

700 WebObjects State of the Union

Room A1
Tue., 9:00am

705 WebObjects and Web Services

Room A1
Wed., 2:00pm

707 WebObjects Java Client

Room A1
Wed., 5:00pm

712 Advanced Enterprise Objects Frameworks

Room A1
Thurs., 5:00pm

Who to Contact

Toni Trujillo Vian
Director, WebObjects Engineering
webobjects@apple.com

Bob Fraser
WebObjects Product Manager
webobjects@apple.com

Apple Professional Services (Training, Support, Consulting)
(800) 848-6398
services@apple.com

http://developer.apple.com/wwdc2002/urls.html

For More Information

- WebObjects Developer Documentation
  http://developer.apple.com/techpubs/webobjects

- Apple Professional Services Technical Support
  www.apple.com/services/technicalsupport)

- Other places
  - **www.apple.com/webobjects**
  - **developer.apple.com/webobjects**
  - **www.apple.com/services**
  - **www.info.apple.com/webobjects**

- Subscribe to:
  webobjects-announce@apple.com
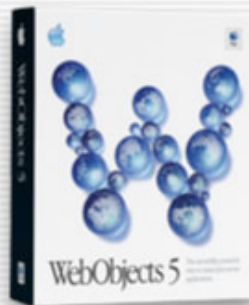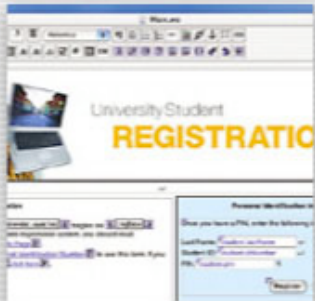
Documentation

Java Client Desktop Applications

How to Access Documentation

- Most up-to-date: PDF and HTML
  http://developer.apple.com/techpubs/webobjects

- Hardcopy print-on-demand
  Vervante.com under Related Resources

- Product CD
  Documents folder and installed in
  /Developer/Documentation/WebObjects

- In the box (localized)
  Installation Guides, What's New, WebObjects
  Overview, Java Client Desktop Applications,
  Discovering WebObjects for HTML

- Check ADC News for latest updates
  http://developer.apple.com/devnews

Q&A

Toni Trujillo Vian
Director, WebObjects Engineering
webobjects@apple.com

http://developer.apple.com/wwdc2002/urls.html